

REMARKS

I. Introduction

In response to the Office Action dated March 7, 2006, Applicants have amended claims 4, 9 and 10 in order to overcome the § 112 rejections and to further clarify the subject matter of the present invention. Support for claim 9 may be found, for example, on page 6, lines 18-20 of the specification. No new matter has been added.

For the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the cited prior art references.

II. The Rejection Of Claims 1-10 Under 35 U.S.C. § 103

Claims 1-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jimbo (*IEEE Trans. Biomed. Eng.* **1993**, 40 (8), 804-810) in view of Yanagimoto et al. (USP No. 5,496,584). Applicants respectfully traverse this rejection of the pending claims for at least the following reasons.

With regard to the present invention, claim 1 recites a method of the immobilization of a cell in which a cell is immobilized in a desired region on the surface of a substrate, which comprises: the step (a) of forming a masking layer in a region except for said desired region on the surface of said substrate, the step (b) of immobilizing said cell following the step (a) through bringing a solution containing said cells into contact with the surface of said substrate and the surface of said masking layer, and the step (c) of adjusting the pH of said solution to give the condition which permits separation of said masking layer from said substrate without loss of the activity of said cell following the step (b).

The Examiner alleges that Jimbo teaches a step wherein cells are immobilized onto a substrate wherein a polyimide film constituting the masking layer is removed after the cells are immobilized (see, Jimbo, pages 805-806). However, as can be seen in Fig. 3 on page 806 of Jimbo, the polyimide film constituting the masking layer is not removed. Only the metal mask is removed. Thus, Jimbo fails to disclose a method of immobilization of a cell which comprises the step of forming a masking layer in a region except for said desired region on the surface of said substrate.

Furthermore, the Examiner noted the failure of Jimbo to disclose the step of adjusting the pH of said solution to give the condition which permits separation of the masking layer from the substrate without loss of the activity of the cell. However, it was also alleged that Yanagimoto teaches the removing of polyimide films by treating the substrate with an alkaline solution, or in other words, by increasing the pH (see, col. 1, line 62-67). What the Examiner failed to point out was that the reference teaches that the alkaline solvent used is preferably within a pH range of 10 to 13.5. It is well known to those skilled in the art that a pH range of 10-13.2 is outside physiological pH and would damage a cell, thereby lowering the activity of said cell. Accordingly, Yanagimoto fails to disclose the step of adjusting the pH of said solution to give the condition which permits separation of said masking layer from said substrate *without loss of the activity of said cell*.

In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 180 USPQ 580 (CCPA1974). As Jimbo and Yanagimoto both fail to teach or suggest a method of the immobilization of a cell in which a cell is immobilized in a desired region on the surface of a substrate, which comprises the step (a) of forming a masking layer in a region except for said

desired region on the surface of said substrate...and the step (c) of adjusting the pH of said solution to give the condition which permits separation of said masking layer from said substrate without loss of the activity of said cell, then based on the foregoing, it is submitted that Jimbo, alone or in combination with Yanagimoto, does not render claim 1 nor any claim dependent thereon obvious.

Moreover, even if Yanagimoto did disclose the adjusting the pH of said solution to give the condition which permits separation of the masking layer from the substrate without loss of the activity of the cell, the combination of this reference with Jimbo is improper. As is disclosed in Fig. 1 of Jimbo, the polyimide film is necessary for the purpose of formation of the small well and should not be peeled off the quartz substrate. However, Yanagimoto discloses that the polyimide film is dissolved in an alkaline solution in order to *remove* the polyimide film. Therefore, this step would remove the small well necessary to measure the cell and therefore render the invention disclosed in Jimbo unusable. As is well known in patent law, if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification, *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Thus, as there is no suggestion or motivation to make the proposed modification, the combination of Jimbo and Yanagimoto is improper.

**III. All Dependent Claims Are Allowable Because The
Independent Claim From Which They Depend Is Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*,

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819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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